REMARKS

This Supplemental Amendment supplements the Amendment filed January 29, 2009 and incorporates by reference the remarks made therein. Applicant thanks the Examiner for the helpful interview conducted February 10, 2009 in which all § 112 and § 102 issues were discussed. Claims 1-23 are pending in this application. Claims 1, 10, 11, 12, 21-23 have been amended.

In paragraph 16 of the Office Action, claims 1, 3, 5-6, 10-12, 14, 16-17, 21 and 23 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,104,989 (Kanevsky). Applicant traverses.

Among the limitations of independent claims 1, 10, 11, and 12 that are neither disclosed nor suggested in the prior art of record are the requirements for "generating a probability model in which information indicating each word of a text document belongs to a topic is made to correspond to a latent variable." On page 6, the Office Action alleges that Kanevsky discloses this feature at col. 2, ll. 25-28 and 45-53. Applicant disagrees.

Kanevsky discloses an approach based on an analogy from a voice recognition technique using Hidden Markov Modeling (HMM), in which a battery of topics are learned from processing training data. Kanevsky, col. 2, ll. 25-44. By using a large amount of learned data (other than the input text document), Kanevsky teaches that topics obtained from the learned data can correspond to latent variables. As taught by Kanevsky, "[t]hreshold ratios [obtained from the learned data] are established for determining [whether there is likely a] change of topics in the text." Kanevsky, col. 2, ll. 40-41. In contrast, claims 1, 10, 11 and 12 recite no such learning step of using training data nor do they require any training data at all.

An additional limitation among the limitations of independent claims 1, 10, 11 and 12 that are neither disclosed nor suggested in the prior art of record are the requirements for "outputting an initial value of a model parameter which defines the [generated] probability model." In a first embodiment comprising a discrete HMM, "parameters defining the model are state transition probabilities . . . and signal output probabilities." Specification, p. 15, ll. 12-14. Kanevsky does not generate a probability model that meets the limitations of claims

1, 10, 11 and 12, *i.e.*, a "model in which information indicating each word of a text document belongs to a topic is made to correspond to a latent variable." The Office Action cites Kanevsky at col. 5, lines 1-2 as supplying this teaching. Applicant disagrees.

Here at the cited portions, Kanevsky teaches that if "a conclusion [concerning emergence of a clear winner] is reached that a topic is not in the list [of topics identified in the training data], declare $\tilde{T}$ the current topic." The neutral topic $\tilde{T}$ is only a placeholder used to restart topic identification when no topic from the battery of topic can be identified. *See* col. 2, ll. 43-44. When a text string does not match any of the topics that were created in the battery by training data, this "neutral topic" is assigned. The neutral topic in Kanevsky segregates the text string to which it is assigned from that being translated unless more training data is used to add an additional topic to the battery. *See* col. 3, ll. 54-55. The selection of a neutral topic does not teach or suggest any initial values for the parameters that define a probability model. Nowhere within the four corners of Kanevsky are there any teachings for initializing model parameters. In the absence of any teaching or suggestion of this claimed feature of the invention, independent claims 1, 10, 11 and 12 are believed to be patentable over Kanevsky.

Among the limitations of independent claims 1, 10, 11 and 12 that are neither disclosed nor suggested in the prior art of record are the requirements for "estimating a model parameter corresponding to a text document as a processing target on the basis of the initial value of the model parameter . . . and only the text document." Among the limitations of independent claims 21-23 that are neither disclosed nor suggested in the prior art of record are the requirements for "estimating a parameter of a probability model so that the probability of the text document being output is maximized or locally maximized, wherein . . . the model is fully defined by a model parameter set which is comprised of word output probabilities of words in the topics in the text document and topic transition probabilities." As discussed above, Kanevsky does not disclose or suggest initializing model parameters, and likewise, Kanevsky does not disclose or suggest estimating them from only the words in the text document.

On page 7, the Office Action alleges that Kanevsky at col. 4, l. 57 to col. 5, l. 5 discloses this feature. Applicant disagrees. Here, Kanevsky teaches finding whether a candidate topic T_i for which the likelihood of the text is maximal, and comparing it against closest competing topics. If the likelihood is higher than a given factor, then T_i is the clear winner. Again, determining which topic among many learned from training data does not provide disclosure of estimating model parameters based on the initial values and only the text document, as required by the claims. In the absence of any teaching or suggestion of this claimed feature of the invention, independent claims 1, 10-12 and 21-23 are believed to be patentable.

Dependent claims 2-9 and 13-20 depend either directly or indirectly from independent claims 1 and 12, and incorporate by reference all of the limitations found therein, and therefore are allowable for the same reasons expressed above. In addition, each of these dependent claims includes additional limitations which, in combination with the limitations incorporated by reference, are neither disclosed nor suggested in the art of record, and therefore are further allowable. Accordingly, claims 2-9 and 13-20 are likewise patentable.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Dated: 3/11/2009

Respectfully submitted,

By_____
Robert G. Gingher
    Registration No.: 45,755
DICKSTEIN SHAPIRO LLP
1177 Avenue of the Americas
New York, New York 10036-2714
(212) 277-6500
Attorneys for Applicant